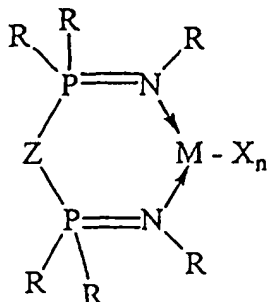


IN THE CLAIMS:

Cancel claims 1-19 and substitute therefore the following new claims:

20. A transition metal complex having the formula

A2



FORMULA I

wherein M is Fe[II], Fe[III], Co[I], Co[II], Co[III], Mn[I], Mn[II], Mn[III], Mn[IV], Ru[II], Ru[III] or Ru[IV]; X represents an atom or group covalently or ionically bonded to the transition metal M;

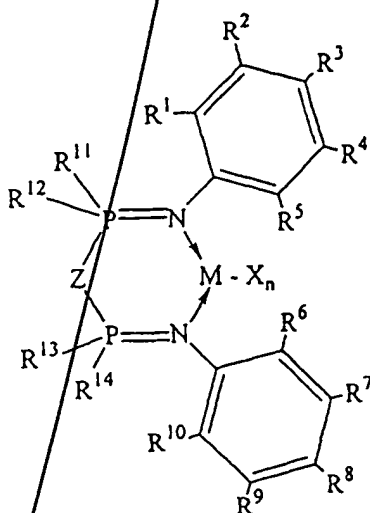
R is independently selected from hydrogen, halogen, hydrocarbyl, substituted hydrocarbyl, heterohydrocarbyl or substituted heterohydrocarbyl;

Z is a bridging group comprising a donor atom of N, P or S or alternatively is a neutral group comprising a C₁₋₄ alkylene group, a silyl or germyl group, and

n = an integer to satisfy the valency of M.

21. A transition metal complex having the formula:

A2



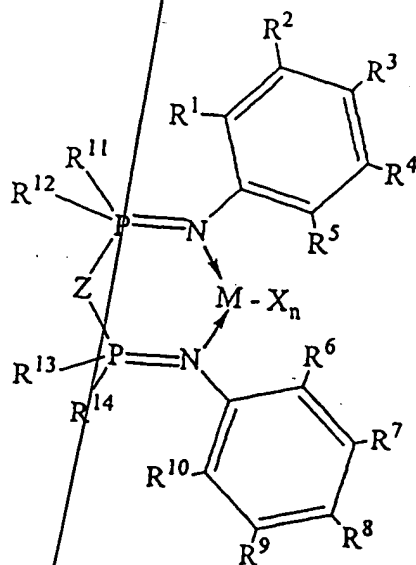
wherein M is Fe[II], Fe[III], Co[I], Co[II], Co[III], Mn[I], Mn[II], Mn[III], Mn[IV], Ru[II], Ru[III] or Ru[IV]; X represents an atom or group covalently or ionically bonded to the transition metal M; Z is a bridging group comprising a donor atom of N, P or S or alternatively is a neutral group comprising a C₁₋₄ alkylene group, a silyl or germyl group, R¹-R¹⁴ are independently selected from hydrogen, halogen, hydrocarbyl, substituted hydrocarbyl, heterohydrocarbyl or substituted heterohydrocarbyl, and n = an integer to satisfy the valency of M.

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22. A complex having the formula:

A2



wherein M is Fe[II], Fe[III], Ni[I], Co[I], Co[II], Co[III], Mn[I], Mn[II], Mn[III], Mn[IV], Ru[II], Ru[III], Ru[IV], Pd[II], V[III], V[IV] or V[V];

X represents an atom or group covalently or ionically bonded to the transition metal M;

Z is a bridging group comprising a donor atom of N, P or S or alternatively is a neutral group comprising a C₁₋₄ alkylene group, a silyl or germyl group,

R¹-R¹⁴ are independently selected from hydrogen, halogen, hydrocarbyl, substituted hydrocarbyl, heterohydrocarbyl, or substituted heterohydrocarbyl, and at least one of R¹-R¹⁰ contains two or more carbon atoms, and

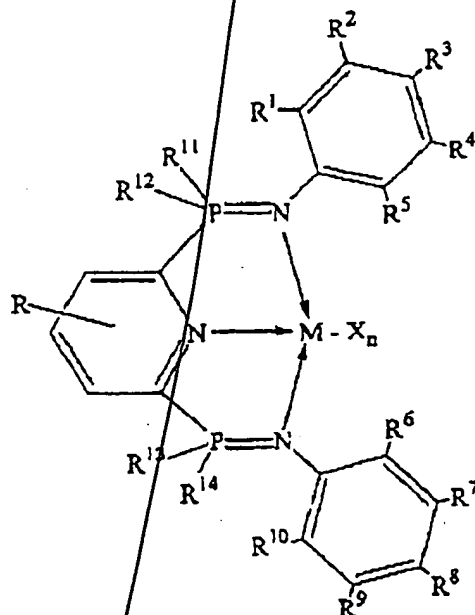
n = an integer to satisfy the valency of M.

23. The complex of claim 21 or 22 wherein R¹¹-R¹⁴ are phenyl, alkyl or cycloalkyl.

24. The complex of claim 20, 21, or 22 wherein the bridging group Z is -CH₂- or a donor atom N.

25. The complex of claim 21 or 22 having the formula

A2



wherein R is hydrogen or hydrocarbyl.

26. The complex of claim 20, 21, or 22 wherein the metal M is Fe or Co.

27. The complex of claim 20, 21, or 22 wherein the Group X is chloride.

28. A polymerization catalyst comprising

- (1) a transition metal complex as defined in claim 20, 21, or 22, and
- (2) an activating quantity of an activator compound.

29. The catalyst of claim 28 wherein the activator compound is an organoaluminum compound or a hydrocarbylboron compound.

30. The catalyst of claim 28 further comprising a neutral Lewis base.

31. The catalyst of claim 28 further comprising a support.

32. The catalyst of claim 31 wherein the support is silica, alumina, or zirconia or is a polymer or prepolymer.